Please amend the above-identified application as follows:

IN THE ABSTRACT:

Please amend the abstract as follows:

Delete the abstract on page 51, and replace with the following:

a1

Liquid crystal display apparatus has liquid crystal display and controller. The display has rectangular pixels arranged in a matrix, with scanning electrodes extending parallel to longer sides of pixels, and signal electrodes extending orthogonal to longer sides of pixels. Controller drives scanning electrodes and signal electrodes. An image is written on the display by using a driving pulse for carrying out writing after resetting liquid crystal and by carrying out interlace scanning with one frame divided into plurality of fields. Vertical pixel pitch is 1/n of horizontal pixel pitch. If vertical pixel pitch is 1/1.5 of horizontal pixel pitch, display data are produced by allocating original image data for pixels Y1' and Y2' to pixels Y1, Y2 and Y3. Display may have first area and second area, and widths and pitch of scanning electrodes in second area may be 1/2 of those of scanning electrodes in first area.

IN THE SPECIFICATION:

Delete paragraph [0009], and replace with the following:

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[0009] A plurality of pixels are formed on the intersections of the scanning electrodes and the signal electrodes. Each of the pixels is substantially a rectangle with shorter sides which are parallel to the first direction and with longer sides which are parallel to the second direction.

Delete paragraph [0019], and replace with the following:

Q3

[0019] These and other objects and features of the present invention will be apparent from the following description with reference to the accompanying drawings, in which:

Fig. 1 is a sectional view of a liquid crystal display which is employed in a first embodiment of a liquid crystal display apparatus according to the present invention;

Fig. 2 is a block diagram which shows a driving circuit of the liquid crystal display;

Figs. 3a and 3b show first and second exemplary pixel structures according to the first embodiment;

Fig. 4 is a chart which shows driving waveforms in a first example of a driving method;

Fig. 5 is a chart which shows driving waveforms in a second example of the driving method;

Fig. 6 is a chart which shows a first example of interlace scanning;

Fig. 7 is a chart which shows writing on a pixel;

Figs. 8a and 8b show original image data and a display which is made by executing the first example of interlace scanning;

Figs. 9a-9c show processes of writing by executing the first example of interlace scanning;

Fig. 10 shows a scroll display made by executing the first example of interlace scanning;

Fig. 11 is a chart which shows a second example of interlace scanning;

Fig. 12 shows a display of original image data shown by Fig. 8a which is made by executing the second example of interlace scanning;

Fig. 13 is a block diagram which shows a driving circuit in a second embodiment of the present invention;

Figs. 14a-14c show pixel structures, Fig. 14a being a chart which shows a pixel structure according to the second embodiment, Fig. 14b being a chart which shows the pixel structure of original image data and Fig. 14c being a chart which shows the pixel structure of one unit according to the

A3 Contd

second embodiment;

Figs. 15a-15c show a first way of allocating data to each pixel according to the second embodiment, Fig. 15a showing an original image, Fig. 15b being a chart which shows image data in a magnified part of the original image, and Fig. 15c being a chart which shows a state wherein data shown by Fig. 15b are allocated for the pixel structure according to the second embodiment;

Figs. 16a-16c show a second way of allocating data to each pixel according to the second embodiment, Fig. 16a being a chart which shows original data; Fig. 16b being a chart which shows a state wherein the original data are allocated for the pixel structure according to the second embodiment, and Fig. 16c being a chart which shows a state wherein the original data are allocated for the pixel structure according to the second embodiment by using a letter font;

Figs. 17a-17d illustrate the principle of operation of a driving IC, Figs. 17a, 17b and 17c being block diagrams of a shift register and Fig. 17d being a block diagram of an averaging circuit;

Figs. 18a and 18b show driving ICs, Fig. 18a being a block diagram which shows an exemplary structure of a driving IC and Fig. 18b being a block diagram which shows a state wherein driving ICs are in cascade connection with each other;

Fig. 19 is a chart which shows a third example of interlace scanning;

Figs. 20a through 20b show processes of writing an image by executing the third example of interlace scanning;

Fig. 21 is a chart which shows a fourth example of interlace scanning;

Figs. 22a and 22b show processes of writing by executing the fourth example of interlace scanning;

Fig. 23 is a block diagram which shows a driving circuit according to a third embodiment;

Figs. 24a and 24b show a first exemplary pixel structure and a second exemplary pixel structure according to the third embodiment;

Fig. 25 is an illustration of a first exemplary arrangement of driving

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ICs;

Fig. 26 is an illustration of a second exemplary arrangement of driving ICs;

Fig. 27 is a chart which shows a fifth example of interlace scanning;

Figs. 28a-28c show a comparative example, Fig. 28a showing original image data and Figs, 28b and 28c showing processes of writing the image data on square pixels by executing the fifth example of interlace scanning;

Figs. 29a-29c show allocation of the original image data for the pixel structure according to the third embodiment and processes of writing the data by executing the fifth example of interlace scanning;

Fig. 30 is a chart which shows a sixth example of interlace scanning;

Fig. 31 is a chart which shows a seventh example of interlace scanning;

Figs. 32a-32c show processes of writing based on the original image data by executing the sixth example of interlace scanning;

Fig. 33 is a block diagram which shows a modification of the driving circuit of the third embodiment; and

Fig. 34 shows exemplary processes of writing still pictures and motion pictures.

Delete paragraph [0023], and replace with the following:

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[0023] Each of the display layers 111R, 111G and 111B has, between transparent substrates 112 on which transparent electrodes 113 and 114 are formed, resin columnar nodules 115, liquid crystal 116 and spacers 117. On the transparent electrodes 113 and 114, an insulating layer 118 and an alignment controlling layer 119 are provided, if necessary. Around the transparent substrates 112 (out of a displaying area), a sealant 120 is provided to seal the liquid crystal 116 therein.

Delete the heading between paragraph [0035] and paragraph [0036], and replace with the following:

a5

Pixel Structure; See Figs. 3a and 3b

Delete paragraph [0066], and replace with the following:

a6

[0066] Figs. 9a-9c show processes of writing an image by carrying out the first exemplary interlace scanning. Fig. 9a shows a state of carrying out writing in the odd-number field, and Fig. 9b shows a state of carrying out writing in the even-number field. For example, if the length of the selection step is 0.1ms to 0.5ms, and if the length of the reset step and the length of the evolution step are around 25msec, writing can be carried out at a rate of about 10 frames per second, although the rate also depends on the number of scanning lines. Accordingly, as Fig. 9c shows, the observer sees no blackouts on the screen.

Delete paragraph [0068], and replace with the following:

a7

[0068] This second example, like the first example, is mainly to avoid a flicker. In Fig. 11, one frame is divided into three fields, and the evolution step of each scanning line in a field is extended to the start of writing on each scanning line in the next field. With this extension, the ratio of the pixels in a blackout state to the pixels in a display state is almost constant, and the brightness of the screen is almost constant.

Delete the heading between paragraph [0071] and paragraph [0072], and replace with the following:

a8

Pixel Structure; See Figs. 14a-14c

Delete paragraph [0072], and replace with the following:

a9

[0072] Figs. 14a-14c show the pixel structure of the second embodiment. In the pixel structure, as Fig. 14a shows, the widths of the scanning electrodes R1 through Rm are smaller than the widths of the signal electrodes C1 through Cn, and accordingly, the respective pixels LR1-C1 through LRm-Cn are rectangular. The scanning electrodes extend along the longer sides of the pixels, and the signal electrodes extend in a direction substantially orthogonal to the longer sides of the pixels.

Delete the heading between paragraph [0076] and paragraph [0077], and replace with the following:

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Display Data; See Figs. 15a-15c and Figs. 16a-16c

Delete paragraph [0078], and replace with the following:

a11

[0078] Figs. 16a-16c show a second display method. In the second method, data in the original pixel Y1' and data in the original pixel Y2' are displayed in the pixel Y1 and in the pixel Y3 respectively, and the data with a higher density of the data in the pixel Y1 and the data in the pixel Y3 are displayed in the middle pixel Y2. Fig. 16a shows original data, and Fig. 16b shows a display which is made by allocating the original data to the pixels by the second method. This second display method is suited when original data are text data.

Delete the heading between paragraph [0082] and paragraph [0083], and replace with the following:

a12

Operation and Structure of Driving ICs; See Figs. 17a-17d and 18a-18b

Delete paragraph [0083], and replace with the following:

A13

[0083] Figs. 17a-17d show the principle of operation of the signal electrode driving IC 132 when the first display method is carried out.

Delete the heading between paragraph [0089] and paragraph [0090], and replace with the following:

A14

Scanning Example 3; See [Figs. 19 and 20] Figs. 19 and 20a-20c

Delete paragraph [0091], and replace with the following:

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[0091] Figs. 20a-20c illustrate processes of writing the image shown by Fig. 15c by executing the third scanning example. Fig. 20a shows a state in which writing is carried out in the first field; Fig. 20b shows a state in which writing is carried out in the second field; and Fig. 20c shows a state in which writing is carried out in the third field.

Delete the heading between paragraph [0091] and paragraph [0092] and replace with the following:

A16

Scanning Example 4; See Figs. 21, 22a, and 22b

Delete paragraph [0093], and replace with the following:

A17

[0093] Figs. 22a and 22b illustrate processes of writing the image shown by Fig. 15c by executing the fourth scanning example. Fig. 22a shows a state in which writing is carried out in the odd-number field; and Fig. 22b shows a state in which writing is carried out in the even-number field.

Delete the heading between paragraph [0100] and paragraph [0101], and replace with the following:

A18

Pixel Structure; See Figs. 24a and 24b

Delete paragraph [0105], and replace with the following:

a19

[0105] A plurality of scanning electrode driving ICs, each of which is to drive a plurality of scanning electrodes, may be provided, and a plurality of signal electrode driving ICs, each of which is to drive a plurality of signal electrodes, may be provided. Fig. 25 shows a first exemplary arrangement of the driving ICs, and Fig. 26 shows a second exemplary arrangement of the driving ICs. In the first example, all the scanning electrode driving ICs are arranged at one side of the display areas 11 and 12. In the second example, for the second display area 12 in which the scanning electrodes are aligned at a smaller pitch, the scanning electrode driving ICs 131 are arranged at both sides. For example, the scanning electrode driving ICs 131 for driving the scanning lines of even numbers are arranged at the right side, and the scanning electrode driving ICs 131 for driving the scanning lines of odd numbers are arranged at the left side. When the liquid crystal display is of a small size, only one scanning electrode driving IC 131 and one signal electrode driving IC 132 may be provided.

Delete the heading between paragraph [0107] and paragraph [0108], and replace with the following:

a20

Scanning Example 5; See Figs. 27, 28a-28c, and 29a-29c

Delete paragraph [0112], and replace with the following:

a21

[0112] Figs. 29a-29c show a case of allocating the original image data shown by Fig. 28a to be displayed in the second display area 12 in which the scanning electrodes are arranged at a half pitch. By allocating the original image data in the way shown by Fig. 29a and by performing writing by the fifth scanning example, as Figs. 29b and 29c show, during the writing, omission of original image data is inhibited, and the image is easily recognizable.

Delete the heading between paragraph [0114] and paragraph [0115], and replace with the following:

a22

Scanning Examples 6 and 7; See Figs. 30, 31, and 32a-32c

Delete paragraph [0116], and replace with the following:

a23

[0116] Figs. 32a-32c show processes of writing an image by the sixth scanning example, and the original image data to be displayed are shown by Fig. 28a. Since the resolution of the scanning lines is higher than that in the fifth scanning example, a smoother image with a higher resolution can be displayed.

Delete the heading between paragraph [0118] and paragraph [0119], and replace with the following:

a24

Writing of Still Picture and Writing of Motion Picture; See Figs. 34a-34c

IN THE CLAIMS:

Please replace the previous version of the claims with the following clean version, wherein claims 2-29, 31-36, and 38-43 incorporate new amendments thereto.